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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/681,753
Filing Date	October 9, 2003
First Named Inventor	Christopher G. WILLIAMS
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	**ELISSE0002**
Total Number of Pages in This Submission	8+refs

ENCLOSURES *(Check all that apply)*

☐ Fee Transmittal Form
  ☐ Fee Attached
☐ Amendment/Reply
  ☐ After Final
  ☐ Affidavits/declaration(s)
☐ Extension of Time Request
☐ Express Abandonment Request
☑ Information Disclosure Statement
☐ Certified Copy of Priority Document(s)
☐ Response to Missing Parts/ Incomplete Application
  ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

☐ Drawing(s)
☐ Licensing-related Papers
☐ Petition
☐ Petition to Convert to a Provisional Application
☐ Power of Attorney, Revocation Change of Correspondence Address
☐ Terminal Disclaimer
☐ Request for Refund
☐ CD, Number of CD(s) ____________

☐ After Allowance communication to Technology Center (TC)
☐ Appeal Communication to Board of Appeals and Interferences
☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
☐ Proprietary Information
☐ Status Letter
☐ Other Enclosure(s) (please Identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	**Joerg-Uwe Szipl** **Registration No. 31,799** **GRIFFIN & SZIPL, P.C.**
Signature	
Date	December 30, 2003

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name			
Signature		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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DEC 3 0 2003
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
	Attorney Docket No.: **ELISSE0002**
Christopher G. WILLIAMS et al.	
	Group Art Unit: unknown
Serial No.: 10/681,753	
	Examiner: unknown
Filed: October 9, 2003	
For: MULTI-LAYERED POLYMERIZING HYDROGELS FOR TISSUE REGENERATION	Date: December 30, 2003

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, this Information Disclosure Statement in connection with the above-identified application is being filed in accordance with 37 C.F.R. §1.97(b) within three months of the filing date of this application (not a C.P.A.). A copy of each of documents listed on the attached Forms PTO/SB/008A and PTO/SB/008B is attached.

Document A relates to biodegradable polymers for cell transplantation. Document B relates to photopolymerizable biodegradable hydrogels as tissue contacting materials and controlled-release carriers. Document C relates to tissue formation by injecting a cell-polymeric solution that gels in vivo. Document D relates to tissue engineered tendons and ligaments. Document E relates to semi-interpenetrating or interpenetrating polymer networks for drug delivery and tissue engineering. Document F relates to gels for encapsulation of biological materials. Document G relates to treating medical conditions by polymerizing macromers to form polymeric materials. Document H relates to three-dimensional polymer matrices. Document I relates to a surface structure for an intraosseous implant. Document J relates to injectable polysaccharide-cell compositions. Document K relates to photopolymerizable biodegradable hydrogels as tissue contacting materials and controlled-release carriers. Document L relates to differences between sub-populations of cultured bovine articular chondrocytes, particularly with regard to their morphology and cartilage matrix production. Document M relates to differences between sub-populations of cultured bovine articular chondrocytes, particularly with regard to proteoglycan metabolism. Document N relates to tissue design and chondrocyte-matrix interactions in articular cartilage. Document O relates to degeneration and osteoarthritis, repair, regeneration, and transplantation in articular cartilage. Document P relates to biological responses of chondrocytes to hydrogels. Document Q relates to photoencapsulation of chondrocytes in poly(ethylene oxide)-based semi-interpenetrating networks. Document R relates to transdermal photopolymerization for minimally invasive implantation. Document S relates to designing biomaterials to direct biological responses. Document T relates to bioactive biomaterials. Document U relates to an experimental model for cartilage tissue engineering to regenerate the zonal organization of articular cartilage. Document V relates to tissue engineering of stratified articular cartilage from chondrocyte subpopulations. Document W relates to the composition of proteoglycans synthesized in different layers of cultured anatomically intact articular cartilage. Document X relates to the controlled enzymatic matrix degradation for integrative cartilage repair. Document Y relates to bioerodibile hydrogels based on photopolymerized poly(ethylene glycol)-co-poly(alpha-hydroxy acid) diacrylate macromers. Document Z relates to subpopulations of chondrocytes from different zones of pig articular cartilage. Document AA relates to experimental models of cartilage repair, particularly cartilage regeneration using principles of tissue engineering. Document AB relates to tissue engineering for regeneration of articular cartilage. Document AC relates to the use of specific chondrocyte populations to modulate the properties of tissue-engineered cartilage. Document AD relates to zone-specific cell biosynthetic activity in mature bovine articular cartilage. Document BA relates to cationic polysaccharides for gene delivery. The relevance of the references is believed to be clear from the specification of the present application. Accordingly, no further comment in regard to the disclosures of these documents is believed to be required.

It is respectfully requested that the attached documents be considered and officially cited, and that a copy of the Forms PTO/SB/008A and PTO/SB/008B, be initialed by the Examiner to indicate that the documents have been considered, and returned to the undersigned.

It is believed that the present Information Disclosure Statement complies with the requirements of 37 C.F.R. §§ 1.97-8, but should this paper necessitate a fee, the Commissioner is hereby authorized to charge the required fee to Deposit Account No. 50-1281.

Respectfully submitted,

GRIFFIN & SZIPL, PC

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	10/681,753
Filing Date	October 9, 2003
First Named Inventor	Christopher G. WILLIAMS
Art Unit	
Examiner Name	
Attorney Docket Number	ELISSE0002

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A	US- 5,399,665	03-21-1995	Barrera et al.	
	B	US- 5,567,435	10-22-1996	Hubbell et al.	
	C	US- 5,709,854	01-20-1998	Griffith-Cima et al.	
	D	US- 6,123,727	09-26-2000	Vacanti et al.	
	E	US- 6,224,893	05-01-2001	Langer et al.	
	F	US- 6,258,870	07-10-2001	Hubbell et al.	
	G	US- 6,465,001	10-15-2002	Hubbell et al.	
	H	US- 6,471,993	10-29-2002	Shastri et al.	
	I	US- 6,554,867	04-29-2003	Joos	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
✓	J	WO-94-25080	11-10-1994	Mass. Inst. Technology		☐
✓	K	WO-93-17669	09-16-1993	Bd. Regents U. Texas		☐
						☐
						☐
						☐
						☐

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 3

	Complete if Known
Applicati n Numb r	10/681,753
Filing Date	October 9, 2003
First Named Inventor	Christopher G. WILLIAMS
Art Unit	
Examiner Name	
Attorney Docket Number	ELISSE0002

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	L	AYDELOTTE, M. et al. "Differences between sub-populations of cultured bovine articular chondrocytes. I: Morphology and cartilage matrix production" Connective Tissue Res., vol. 18, pp. 205-222. (1988)	☐
	M	AYDELOTTE, M. et al. "Differences between sub-populations of cultured bovine articular chondrocytes. II: Proteoglycan metabolism" Connective Tissue Res., vol. 18, pp. 223-234. (1988)	☐
	N	BUCKWALTER, J. et al. "Articular Cartilage Part I: Tissue design and chondrocyte-matrix interactions" The Journal of Bone and Joint Surgery, vol. 79-A, pp. 600-611 (1997)	☐
	O	BUCKWALTER, J. et al. "Articular Cartilage Part II: Degeneration and osteoarthritis, repair, regeneration, and transplantation" The Journal of Bone and Joint Surgery, vol. 79-A, pp. 612-632. (1997)	☐
	P	ELISSEEFF, J. et al. "Biological response of chondrocytes to hydrogels" Ann. N.Y. Acad. Sci. vol. 961, pp. 118-122. (2002)	☐
	Q	ELISSEEFF, J. et al. "Photoencapsulation of chondrocytes in poly(ethylene oxide)-based semi-interpenetrating networks" J. Biomed. Mater. Res., vol. 51, pp. 164-171. (2000)	☐
	R	ELISSEEFF, J. et al. "Transdermal photopolymerization for minimally invasive implantation" Proc. Nat'l. Acad. Sci. USA., vol. 96, pp. 3104-3107. (1999)	☐
	S	HEALY, K. et al. "Designing biomaterials to direct biological responses" Ann. N.Y. Acad. Sci., vol. 875, pp. 24-35. (1999)	☐
	T	HUBBELL, J. et al. "Bioactive biomaterials" Curr. Opin. Biotechnol., vol. 10, pp. 123-129. (1999)	☐
	U	KIM, T.-K. et al. "Experimental model for cartilage tissue engineering to regenerate the zonal organization of articular cartilage" OsteoArthritis and Cartilage, vol. 11, pp. 653-664. (2003)	☐

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Applicant's unique citation designation number (optional). [2] Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3 of 3

	Complete if Known
Application Number	10/681,953
Filing Date	October 9, 2003
First Named Inventor	Christopher G. WILLIAMS
Art Unit	
Examiner Name	
Attorney Docket Number	ELISSE0002

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
/	V	KLEIN, T. et al. "Tissue engineering of stratified articular cartilage from chondrocyte subpopulations" OsteoArthritis and Cartilage, vol. 11, pp. 595-602. (2003)	☐
/	W	KORVER, G. et al. "Composition of proteoglycans synthesized in different layers of cultured anatomically intact articular cartilage" Matrix, vol. 10, pp. 394-401. (1990)	☐
/	X	QUINN, T. et al. "Controlled enzymatic matrix degradation for integrative cartilage repair" Tissue Engineering, vol. 8, pp. 799-806. (2002)	☐
/	Y	SAWHNEY, A. et al. "Bioerodibile hydrogels based on photopolymerized poly(ethylene glycol)-co-poly(alpha-hydroxy acid) diacrylate macromers" Macromolecules, vol. 26, pp. 581-587. (1993)	☐
/	Z	SICZKOWSKI, M. et al. "Subpopulations of chondrocytes from different zones of pig articular cartilage" The Journal of Cell Science, vol. 97, pp. 349-360. (1990)	☐
/	AA	SOLCHAGA, L. et al. "Experimental models of cartilage repair: cartilage regeneration using principles of tissue engineering" Clin. Orthopaedics and Related Res., vol. 391S, pp. S161-170. (2001)	☐
/	AB	TEMENOFF, J. et al. "Review: tissue engineering for regeneration of articular cartilage" Biomaterials, vol. 21: pp. 431-440. (2000)	☐
/	AC	WALDMAN, S. et al. "The use of specific chondrocyte populations to modulate the properties of tissue-engineered cartilage" J. Orthopedic Res., vol. 21, pp. 132-138. (2003)	☐
/	AD	WONG, M. et al. "Zone-specific cell biosynthetic activity in mature bovine articular cartilage" J. Orthopaedic Res., vol. 14, pp. 424-432. (1996)	☐
/	BA	ASSAM, T. et al. "Cationic polysaccharides for gene delivery" Macromolecules, vol. 35, pp. 9947-9953. (2002)	☐

Examiner Signature		Date Considered	

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